

AK

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/731,884	BANSAL, NITIN	
	<b>Examiner</b>	<b>Art Unit</b>	
	Gary L. Laxton	2838	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed 03/21/05.
2. ☒ The allowed claim(s) is/are 1-15.
3. ☒ The drawings filed on 09 December 2003 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

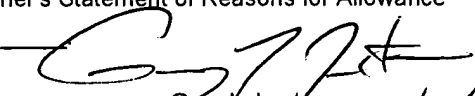
\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |  |
|---|--|
| <ol style="list-style-type: none"> <li>1. <input type="checkbox"/> Notice of References Cited (PTO-892)</li> <li>2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</li> <li>3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br/>Paper No./Mail Date _____</li> <li>4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br/>of Biological Material</li> </ol> | <ol style="list-style-type: none"> <li>5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)</li> <li>6. <input type="checkbox"/> Interview Summary (PTO-413),<br/>Paper No./Mail Date _____</li> <li>7. <input type="checkbox"/> Examiner's Amendment/Comment</li> <li>8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance</li> <li>9. <input type="checkbox"/> Other</li> </ol> |
|---|--|

  
 Gary L. Laxton  
 Primary Examiner  
 Art Unit: 2838

5/18/05

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

### ***Allowable Subject Matter***

2. Claims 1-15 are allowed.

3. The following is an examiner's statement of reasons for allowance:

Claims 1-4; prior art fails to disclose or suggest, inter alia, a low dropout voltage regulator comprising a current sense transistor coupled to a series pass transistor using current mirroring to monitor the current; a reference current source coupled to the output of the current sense transistor; and a junction of the current sense transistor and the reference current source being connected to the difference voltage amplifier in a manner that increases an apparently sensed output voltage as the current through the current sense transistor exceeds the reference current value.

Claims 5 and 6; prior art fails to disclose or suggest, inter alia, a method for improving current limiting in an integrated low Drop Out comprising: receiving a reference voltage at a first input of a difference voltage amplifier; sensing a regulator output voltage; applying the sensed regulator output voltage to a second input of the difference voltage amplifier in a manner that provides negative feedback; sensing current passing through the regulator output; comparing the sensed current to a reference current; and controlling operation of the difference voltage amplifier in a manner that increases the sensed regulator output voltage if the sensed current exceeds the reference current.

Claims 7-11; prior art fails to disclose or suggest, inter alia, a low drop-out voltage regulator, comprising: a differential amplifier stage including; and a current control transistor coupled the differential amplifier; and an output stage including: a pass transistor coupled between a regulator input and the regulator output and controlled by an output of the differential amplifier; and a current sensing transistor coupled between the regulator input and the current control transistor of the differential amplifier.

Claim 13; prior art fails to disclose or suggest, inter alia, a method comprising: sensing an output regulated voltage; comparing the output regulated voltage to a reference voltage; controlling the output voltage through negative feedback to substantially match the reference voltage; sensing a current associated with the output voltage; comparing the sensed current to a reference current; if the sensed current exceeds the reference current, then overriding the sensing of the output regulated voltage to sense a higher voltage.

Claim 14; prior art fails to disclose or suggest, inter alia, a regulator comprising a regulator, comprising: a negative feedback voltage control circuit that senses an output regulated

Art Unit: 2838

voltage and controls that sensed output regulated voltage to substantially match a reference voltage; a current sensor that senses a current associated with the output regulated voltage and compares the sensed current to a reference current; and a feedback control circuit responsive to sensed current exceeding the reference current to override the negative feedback voltage control circuit sensing of the output regulated voltage to sense a higher voltage.

Claim 15; prior art fails to disclose or suggest, inter alia, a regulator comprising differential amplifier including first and second mirrored current paths, a current flowing in the first current path being controlled by the output regulated voltage, and a current flowing in the second current path controlling the sensed output regulated voltage to substantially match the reference voltage; an override circuit coupled to the first current path and responsive to the feedback control circuit to maintain current flowing in the first current path as the output regulated voltage decreases.

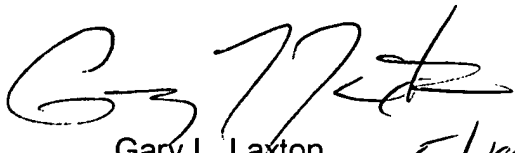
Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Art Unit: 2838

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gary L. Laxton whose telephone number is (571) 272-2079. The examiner can normally be reached on Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on (571) 272-2084. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Gary L. Laxton  
Primary Examiner  
Art Unit 2838  
5/18/05